- (34a) meso-CH₂CH₂(2-MeInd)₂ZrMe₂ and rac-Me₃Si(2-Me-4-PhInd)₂ZrMe₂ activated with N₂N-dimethylanilinium tetrakis(pentaflourophenyl)boron and or triphenylcarbonium tetrakis(pentaflourophenyl)boron;
- (35) meso-CH₂CH₂(2-MeInd)₂ZrCl₂ and rac-Me₂Si(2-MeInd)₂ZrCl₂ activated with an alumoxane:
- (36) meso-CH₂CH₂(2-MeInd)₂ZrMe₂ and rac-Me₂Si(2-MeInd)₂ZrMe₂ activated with a non-coordinating anion activator;
- (36a) meso-CH₂CH₂(2-MeInd)₂ZrMe₂ and rac-Me₂Si(2-MeInd)₂ZrMe₂ activated with N₂N-dimethylanilinium tetrakis(pentaflourophenyl)boron and or triphenylcarbonium tetrakis(pentaflourophenyl)boron;
- (37) meso-Me₂Si(2-Me-4-PhInd)₂ZrCl₂ and rac-Me₂Si(2-Me-4-PhInd)₂ZrCl₂ activated with an alumoxane;
- (38) meso-Me₂Si(2-Me-4-PhInd)₂ZrMe₂ and rac-Me₂Si(2-Me-4-PhInd)₂ZrMe₂ activated with a non-coordinating anion activator;
- (38a) meso-Me₂Si(2-Me-4-PhInd)₂ZrMe₂ and rac-Me₂Si(2-Me-4-PhInd)₂ZrMe₂ activated with N₁N-dimethylanilinium tetrakis(pentaflourophenyl)boron and or triphenylcarbonium tetrakis(pentaflourophenyl)boron;
- (39) meso-CH₂CH₂(2-Me-4-PhInd)₂ZrCl₂ and rac-CH₂CH₂(2-Me-4-PhInd)₂ZrCl₂ activated with an alumoxane;

- (40) meso-CH₂CH₂(2-Me-4-PhInd)₂ZrMe₂ and rac-CH₂CH₂(2-Me-4-PhInd)₂ZrMe₂ activated with a non-coordinating anion activator;
- (40a) meso-CH₂CH₂(2-Me-4-PhInd),ZrMe₂ and rac-CH₂CH₂(2-Me-4-PhInd),ZrMe₂ activated with N,N-dimethylanilinium tetrakis(pentaflourophenyl)boron and or triphenylcarbonium tetrakis(pentaflourophenyl)boron;
- (41) meso-CH₂CH₂(2-MeInd)₂ZrCl₂ and rac-CH₂CH₂(2-MePhInd)₂ZrCl₂ activated with an alumoxane;
- (42) meso-CH₂CH₂(2-MeInd)₂ZrMe₂ and rac-CH₂CH₂(2-MeInd)₂ZrMe₂ activated with a non-coordinating anion activator;
- (42a) meso-CH₂CH₂(2-MeInd),ZrMe₂ and rac-CH₂CH₂(2-MeInd),ZrMe₂ activated with N,N-dimethylanilinium tetrakis(pentaflourophenyl)boron and or triphenylearbonium tetrakis(pentaflourophenyl)boron;
- (43) meso-CH₂CH₂(Ind)₂ZrCl₂ and rac-CH₂CH₂(Ind)₂ZrCl₂ activated with an alumoxane;
- (44) meso-CH₂CH₂(Ind)₂ZrMe₂ and rac-CH₂CH₂(Ind)₂ZrMe₂ activated with a non-coordinating anion activator;
- (44a) meso-CH₂CH₂(Ind)₂ZtMe₂ and rac-CH₂CH₂(Ind)₂ZrMe₂ activated with N,N-dimethylanilinium tetrakis(pentaflourophenyl)boron and or triphenylcarbonium tetrakis(pentaflourophenyl)boron;
- (45) meso-Me₂Si(Ind)₂ZrCl₂ and rac-Me₂Si(Ind)₂ZrCl₂ activated with an alumoxane:

- (46) meso-Me₂Si(Ind)₂ZrMe₂ and rac-Me₂Si(Ind)₂ZrMe₂ activated with a non-coordinating anion activator;
- (46a) meso-Me₂Si(Ind)₂ZrMe₂ and rac-Me₂Si(Ind)₂ZrMe₂ activated with N,N-dimethylanilinium tetrakis(pentaflourophenyl)boron and or triphenylcarbonium tetrakis(pentaflourophenyl)boron;
- (47) meso-CH₂CH₂(Ind)₂ZrCl₂ and rac-CH₂CH₂(4,7-Me₂Ind)₂ZrCl₂ (4,7-Me₂Ind) = 4,7-dimethylindenyl) activated with an alumoxane;
- (48) meso-CH₂CH₂(Ind)₂ZrMe₂ and rac-CH₂CH₂(4,7-Me₂Ind)₂ZrMe₂ activated with a non-coordinating anion activator;
- (48a) meso-CH₂CH₂(Ind)₂ZrMe₂ and rac-CH₂CH₂(4,7-Me₂Ind)₂ZrMe₂ activated with N,N-dimethylanilinium tetrakis(pentaflourophenyl)boron and or triphenylcarbonium tetrakis(pentaflourophenyl)boron;
- (49) meso-Me₂Si(Ind)₂ZrCl₂ and rac-CH₂CH₂(4,7-Me₂Ind)₂ZrCl₂ activated with an alumoxane:
- (50) meso-Me₂Si(Ind)₂ZrMe₂ and rac-CH₂CH₂(4,7-Me₂Ind)₂ZrMe₂ activated with a non-coordinating amon activator;
- (50a) meso-Me₂Si(Ind),ZrMe₂ and rac-CH₂CH₂(4,7-Me₂Ind),ZrMe₂ activated with N,N-dimethylanilinium tetrakis(pentaflourophenyl)boron and or triphenylcarbonium tetrakis(pentaflourophenyl)boron;

- (51) meso-CH₂CH₂(2-MeInd)₂ZrCl₂ and rac-CH₂CH₂(4,7-Me₂Ind)₂ZrCl₂ (4,7-Me₂Ind = 4,7-dimethylindenyl) activated with an alumoxane:
- (52) meso-CH₂CH₂(2-MeInd)₂ZrMe₂ and rac-CH₂CH₂(4,7-Me₂Ind)₂ZrMe₂ activated with a non-coordinating anion activator;
- (52a) meso-CH₂CH₂(2-MeInd)₂ZrMe₂ and rac-CH₂CH₂(4,7-Me₂Ind)₂ZrMe₂ activated with N₂N-dimethylanilinium tetrakis(pentaflourophenyl)boron and or triphenylcarbonium tetrakis(pentaflourophenyl)boron;
- (53) meso-Me₂Si(2-MeInd)₂ZrCl₂ and rac-CH₂CH₂(4,7-Me₂Ind)₂ZrCl₂ activated with an alumoxane;
- (54) meso-Me₂Si(2-MeInd)₂ZrMe₂ and rac-CH₂CH₂(4,7-Me₂Ind)₂ZrMe₂ activated with a non-coordinating anion activator;
- (54a) meso-Me₂Si(2-MeInd)₂ZrMe₂ and rac-CH₂CH₂(4,7-Me₂Ind)₂ZrMe₂ activated with such as N₂N-dimethylanilinium tetrakis(pentaflourophenyl)boron and or triphenylcarbonium tetrakis(pentaflourophenyl)boron;
- 76. The process of any of claims 55 to 75 wherein the second catalyst component comprises one or more of: dimethylsiladiyl(2-methyl, 4-[3',5'-di-tbutylphenyl]indenyl)₂zirconium dichloride; dimethylsiladiyl(2-ethyl, 4-[3',5'-di-tbutylphenyl]indenyl)₂zirconium dichloride; dimethylsiladiyl(2-n-propyl, 4-[3',5'-di-tbutylphenyl]indenyl)₂zirconium dichloride:

- dimethylsiladiyl(2-iso-propyl, 4-[3',5'-di-tbutylphenyl]indenyl),zirconium dichloride:
- dimethylsiladiyl(2-n-butyl, 4-[3',5'-di-tbutylphenyl]jindenyl) $_2$ zirconium dichloride:
- dimethylsiladiyl(2-iso-butyl, 4-[3',5'-di-tbutylphenyl]jindenyl),zirconium dichloride:
- $\label{limit} \mbox{dimethylsiladiyl(2-sec-butyl, 4-[3',5'-di-tbutylphenyl]indenyl)}_{2} \mbox{zirconium dichloride:}$
- dimethylsiladiyl(2-tert-butyl, 4-[3',5'-di-tbutylphenyl]indenyl)₂zirconium dichloride;
- dimethylsiladiyl(2-methyl, 4-[3',5'-di-tbutylphenyl]indenyl)₂hafnium dichloride:
- dimethylsiladiyl(2-ethyl, 4-[3',5'-di-tbutylphenyl]indenyl)₂hafnium dichloride:
- dimethylsiladiyl(2-n-propyl, 4-[3',5'-di-tbutylphenyl]indenyl) ₂hafnium dimethylsiladiyl(2-iso-propyl, 4-[3',5'-di-tbutylphenyl]indenyl) ₂hafnium dichloride:
- $\label{limit} dimethylsiladiyl (2-butyl, 4-[3',5'-di-tbutylphenyl] indenyl) {\it {\tiny 2}} hafnium \\ dichloride;$
- 9-silafluorendiyl(2-methyl, 4-[3',5'-di-tbutylphenyl]indenyl),zirconium dichloride;
- 9-silafluorendiyI(2-ethyl, 4-[3',5'-di-tbutylphenyl]indenyl)₂zirconium dichloride:
- 9-silafluorendiyl(2-n-propyl, 4-[3',5'-di-tbutylphenyl]indenyl) $_2$ zirconium dichloride;
- 9-silafluorendiyl(2-iso-propyl, 4-[3',5'-di-tbutylphenyl]indenyl);zirconium dichloride;
- 9-silafluorendiyl(2-n-butyl, 4-[3',5'-di-tbutylphenyl]indenyl)₂zirconium dichloride;

- 9-silafluorendiyl(2-iso-butyl, 4-[3',5'-di-tbutylphenyl]indenyl),zirconium dichloride:
- 9-silafluorendiyl(2-sec-butyl, 4-[3',5'-di-fbutylphenyl]indenyl)₂zirconium dichloride;
- $9-sil afluorendiyl (2-tert-butyl, 4-[3',5'-di-tbutylphenyl] indenyl)_{2} zirconium dichloride:$
- $9-sil affuor endiyl (2-methyl, 4-[3',5'-di-tbutyl phenyl] indenyl) {\it $_{\rm h}$} afnium dichloride;$
- 9-silafluorendiyl(2-ethyl, 4-[3',5'-di-tbutylphenyl]indenyl) ₂hafnium dichloride:
- 9-silafluorendiyl(2-n-propyl, 4-[3',5'-di-tbutylphenyl]indenyl) hafnium dichloride;
- 9-silafluorendiyl(2-iso-propyl, 4-[3',5'-di-tbutylphenyl]indenyl),hafinium dichloride;
- 9-silafluorendiyl
(2-n-butyl, 4-[3',5'-di-tbutylphenyl]indenyl) $_2$ hafnium dichloride;
- 9-silafluorendiyl(2-iso-butyl, 4-[3',5'-di-tbutylphenyl]indenyl),hafnium dichloride;
- $9-silafluorendiyl (2-sec-butyl, 4-[3',5'-di-tbutylphenyl] indenyl) {\tt _hafnium dichloride};$
- 9-silafluorendiyl(2-tert-butyl, 4-[3',5'-di-tbutylphenyl]indenyl)₂hafnium dichloride;
- dimethylsiladiyl(2-ethyl, 4-[3',5'-di-tbutylphenyl]indenyl),zirconium dimethyl;
- dimethylsiladiyl(2-n-propyl, 4-[3',5'-di-tbutylphenyl]indenyl),zirconium dimethyl:
- dimethylsiladiyl(2-iso-propyl, 4-[3',5'-di-tbutylphenyl]indenyl)₂zirconium dimethyl;

- dimethylsiladiyl(2-n-butyl, 4-[3',5'-di-tbutylphenyl]indenyl),zirconium dimethyl;
- $\label{limit} dimethyl siladiyl (2-iso-butyl, 4-[3',5'-di-tbutyl phenyl] indenyl)_2 zirconium \\ dimethyl:$
- $\label{limit} dimethyl siladiyl (2-sec-butyl, 4-[3',5'-di-tbutyl phenyl] indenyl) {\it _2} zirconium dimethyl;$
- $\label{limit} dimethyl siladiyl (2-text-butyl, 4-[3',5'-di-tbutyl phenyl] indenyl)_{2} zirconium \\ dimethyl;$
- dimethylsiladiyl(2-methyl, 4-[3',5'-di-tbutylphenyl]indenyl)₂hafnium dimethyl;
- dimethylsiladiyl(2-ethyl, 4-[3',5'-di-tbutylphenyl]indenyl),hafnium dimethyl;
- dimethylsiladiyl(2-n-propyl, 4-[3',5'-di-tbutylphenyl]indenyl),hafnium dimethyl
- $\label{limit} \mbox{dimethylsiladiyl(2-iso-propyl, $4-[3',5'-di-tbutylphenyl]$ indenyl), $affnium dimethyl:}$
- $\label{limit} dimethyl siladiyl (2-n-butyl, 4-[3',5'-di-tbutylphenyl] indenyl) {}_2hafnium \\ dimethyl;$
- dimethylsiladiyl(2-iso-butyl, 4-[3',5'-di-tbutylphenyl]indenyl) hafnium dimethyl:
- $\label{limit} dimethyl siladiyl (2-sec-butyl, 4-[3',5'-di-tbutyl phenyl] indenyl) {\it $_1$} hafnium dimethyl;$
- dimethylsiladiyl(2-tert-butyl, 4-[3',5'-di-tbutylphenyl]indenyl)₂hafinium dimethyl;
- 9-silafluorendiyl(2-methyl, 4-[3',5'-di-tbutylphenyl]indenyl),zirconium dimethyl;
- 9-silafluorendiyl(2-ethyl, $4-[3',5'-di-tbutylphenyl]indenyl)_zzirconium dimethyl:$
- $9-silafluorendiyl (2-n-propyl, 4-[3',5'-di-tbutylphenyl] indenyl)_z zirconium \\ dimethyl;$

- 9-silafluorendiyl(2-iso-propyl, 4-[3',5'-di-tbutylphenyl]indenyl)₂zirconium dimethyl;
- $9-silafluorendiyl(2-n-butyl, 4-[3',5'-di-tbutylphenyl]indenyl)_z zirconium dimethyl; \\$
- $9-sil affluorendiyl (2-iso-butyl, 4-[3^{\circ},5^{\circ}-di-tbutyl phenyl] indenyl)_{z} zirconium dimethyl; \\$
- 9-silafluorendiyl(2-sec-butyl, 4-[3',5'-di-tbutylphenyl]indenyl);zirconium dimethyl;
- $9-sil a fluorendiyl (2-tert-butyl, 4-[3',5'-di-tbutyl phenyl] indenyl)_z zirconium \\ dimethyl;$
- 9-silafiuorendiyl(2-methyl, 4-[3',5'-di-tbutylphenyl]indenyl) 2hafnium dimethyl;
- 9-silafluorendiyl(2-ethyl, 4-[3',5'-di-tbutylphenyl]indenyl)₂hafnium dimethyl:
- 9-silafluorendiyl(2-n-propyl, 4-[3',5'-di-tbutylphenyl]jindenyl)₂hafnium dimethyl;
- 9-sil a fluorendiyl (2-iso-propyl, 4-[3',5'-di-tbutyl phenyl] indenyl), hafnium dimethyl;
- $9-silafluorendiyl\\ (2-n-butyl, 4-[3',5'-di-tbutylphenyl]indenyl)_2hafnium dimethyl;$
- 9-silafluorendiyl(2-iso-butyl, 4-[3',5'-di-tbutylphenyl]indenyl),hafnium dimethyl;
- 9-silafluorendiyl(2-sec-butyl, $4-[3',5'-di-tbutylphenyl]indenyl)_2hafnium dimethyl;$
- 9-silafluorendiyl(2-tert-butyl, 4-[3',5'-di-tbutylphenyl]indenyl),hafnium dimethyl:
- dimethylsiladiyl(2-methyl, 4-f3',5'-bis-
- trifluoromethylphenyl]indenyl),zirconium dichloride;
- dimethylsiladiyl(2-ethyl, 4-[3',5'-bis-
- trifluoromethylphenyl]indenyl),zirconium dichloride;

dimethylsiladiyl(2-n-propyl, 4-[3',5'-bistrifluoromethylphenyl]indenyl)2zirconium dichloride; dimethylsiladiyl(2-iso-propyl, 4-13'.5'-bistrifluoromethylphenyl]indenyl),zirconium dichloride: dimethylsiladiyl(2-n-butyl, 4-[3',5'-bistrifluoromethylphenyl]indenyl),zirconium dichloride; dimethylsiladiyl(2-iso-butyl, 4-[3',5'-bistrifluoromethylphenyl]indenyl),zirconium dichloride; dimethylsiladiyl(2-sec-butyl, 4-[3',5'-bistrifluoromethylphenyl]indenyl),zirconium dichloride; dimethylsiladiyl(2-tert-butyl, 4-[3',5'-bistrifluoromethylphenyllindenyl)-zirconium dichloride: dimethylsiladiyl(2-methyl, 4-[3',5'-bis-trifluoromethylphenyl]indenyl) hafnium dichloride; dimethylsiladiyl(2-ethyl, 4-[3',5'-bis-trifluoromethylphenyl]indenyl) hafnium dichloride: dimethylsiladiyl(2-n-propyl, 4-[3',5'-bistrifluoromethylphenyl]indenyl),hafnium dichloride; dimethylsiladiyl(2-iso-propyl, 4-[3',5'-bistrifluoromethylphenyl]indenyl),hafnium dichloride; dimethylsiladiyl(2-n-butyl, 4-[3',5'-bistrifluoromethylphenyl]indenyl),hafnium dichloride; dimethylsiladiyl(2-iso-butyl, 4-[3',5'-bistrifluoromethylphenyllindenyl), hafnium dichloride; dimethylsiladiyl(2-sec-butyl, 4-F3',5'-bistrifluoromethylphenyllindenyl).hafnium dichloride; dimethylsiladiyl(2-tert-butyl, 4-[3',5'-bistrifluoromethylphenyl]indenyl).hafnium dichloride; 9-silafluorendiyl(2-methyl, 4-[3',5'-bistrifluoromethylphenyl]indenyl),zirconium dichloride;

dimethylsiladiyl(2-ethyl, 4-[3',5'-bis-

trifluoromethylphenyl]indenyl),hafnium dichloride;

9-silafluorendiyl(2-n-propyl, 4-[3',5'-bis-

trifluoromethylphenyl]indenyl),zirconium dichloride;

9-silafluorendivl(2-iso-propyl, 4-13'.5'-bis-

trifluoromethylphenyl]indenyl),zirconium dichloride;

9-silafluorendiyl(2-n-butyl, 4-[3',5'-bis-

trifluoromethylphenyl]indenyl),zirconium dichloride;

9-silafluorendiyl(2-iso-butyl, 4-f3',5'-bis-

trifluoromethylphenyl]indenyl),zirconium dichloride:

9-silafluorendiyl(2-sec-butyl, 4-[3',5'-bis-

trifluoromethylphenyl]indenyl)2zirconium dichloride;

9-silafluorendiyl(2-tert-butyl, 4-[3',5'-bis-

trifluoromethylphenyl]indenyl),zirconium dichloride:

9-silafluorendiyl(2-methyl, 4-[3',5'-bis-trifluoromethylphenyl]indenyl)

.hafnium dichloride:

9-silafluorendivl(2-ethyl, 4-f3',5'-bis-

trifluoromethylphenyl]indenyl).hafnium dichloride;

9-silafluorendiyl(2-n-propyl, 4-[3',5'-bis-trifluoromethylphenyl]indenyl)2

hafnium dichloride:

9-silafluorendiyl
(2-iso-propyl, 4-[3',5'-bis- trifluoromethylphenyl]
indenyl) $_{2}$

hafnium dichloride;

9-silafluorendiyl(2-n-butyl, 4-[3',5'-bis-

trifluoromethylphenyl]indenyl)2hafnium dichloride;

9-silafluorendiyl(2-iso-butyl, 4-[3',5'-bis-

trifluoromethylphenyl]indenyl),hafnium dichloride;

9-silafluorendiyl(2-sec-butyl, 4-[3',5'-bis-

trifluoromethylphenyl]indenyl).hafnium dichloride:

9-silafluorendiyl(2-tert-butyl, 4-[3',5'-bis-

trifluoromethylphenyl]indenyl),hafnium dichloride;

dimethylsiladiyl(2-methyl, 4-[3',5'-bistrifluoromethylphenyllindenyl),zirconium dimethyl: dimethylsiladiyl(2-ethyl, 4-[3',5'-bistrifluoromethylphenyllindenyl),zirconium dimethyl: dimethylsiladiyl(2-n-propyl, 4-[3',5'-bistrifluoromethylphenyllindenyl),zirconium dimethyl; dimethylsiladiyl(2-iso-propyl, 4-[3',5'-bistrifluoromethylphenyllindenyl), zirconium dimethyl: dimethylsiladiyl(2-n-butyl, 4-[3',5'-bistrifluoromethylphenyllindenyl), zirconium dimethyl: dimethylsiladiyl(2-iso-butyl, 4-[3',5'-bistrifluoromethylphenyllindenyl),zirconium dimethyl; dimethylsiladiyl(2-sec-butyl, 4-f3',5'-bistrifluoromethylphenyl]indenyl);zirconium dimethyl; dimethylsiladiyl(2-tert-butyl, 4-[3',5'-bistrifluoromethylphenyl]indenyl),zirconium dimethyl; dimethylsiladiyl(2-methyl, 4-[3',5'-bis-trifluoromethylphenyl]indenyl) hafnium dimethyl: dimethylsiladiyl(2-ethyl, 4-[3',5'-bis-trifluoromethylphenyl]indenyl) ahafnium dimethyl: dimethylsiladiyl(2-n-propyl, 4-[3',5'-bistrifluoromethylphenyllindenyl), hafnium dimethyl; dimethylsiladiyl(2-iso-propyl, 4-[3',5'-bistrifluoromethylphenyllindenyl).hafnium dimethyl: dimethylsiladiyl(2-n-butyl, 4-[3',5'-bistrifluoromethylphenyl]indenyl).hafnium dimethyl: dimethylsiladiyl(2-iso-butyl, 4-[3',5'-bistrifluoromethylphenyllindenyl).hafnium dimethyl; dimethylsiladiyl(2-sec-butyl, 4-[3',5'-bis-

trifluoromethylphenyl]indenyl),hafnium dimethyl;

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dimethylsiladiyl(2-tert-butyl, 4-[3',5'-bistrifluoromethylphenyllindenyl).hafnium dimethyl: 9-silafluorendivl(2-methyl, 4-13',5'-bistrifluoromethylphenyllindenyl).zirconium dimethyl: dimethylsiladiyl(2-ethyl, 4-[3',5'-bistrifluoromethylphenyl]indenyl);hafnium dimethyl; 9-silafluorendiyl(2-n-propyl, 4-[3',5'-bistrifluoromethylphenyllindenyl)-zirconium dimethyl: 9-silafluorendiyl(2-iso-propyl, 4-[3',5'-bistrifluoromethylphenyllindenyl),zirconium dimethyl; 9-silafluorendiyl(2-n-butyl, 4-[3',5'-bistrifluoromethylphenyl]indenyl),zirconium dimethyl; 9-silafluorendivl(2-iso-butvl, 4-[3',5'-bistrifluoromethylphenyl]indenyl),zirconium dimethyl; 9-silafluorendiyl(2-sec-butyl, 4-13',5'-bistrifluoromethylphenyl]indenyl);zirconium dimethyl; 9-silafluorendiyl(2-tert-butyl, 4-[3',5'-bistrifluoromethylphenyllindenyl), zirconium dimethyl; 9-silafluorendiyl(2-methyl, 4-[3',5'-bis-trifluoromethylphenyl]indenyl) hafnium dimethyl; 9-silafluorendivl(2-ethyl, 4-f3',5'-bistrifluoromethylphenyllindenyl).hafnium dimethyl: 9-silafluorendiyl(2-n-propyl, 4-[3',5'-bis- trifluoromethylphenyl]indenyl), hafnium dimethyl: 9-silafluorendiyl(2-iso-propyl, 4-[3',5'-bis-trifluoromethylphenyl]indenyl), hafnium dimethyl: 9-silafluorendiyl(2-n-butyl, 4-[3',5'-bistrifluoromethylphenyllindenyl).hafnium dimethyl: 9-silafluorendiyl(2-iso-butyl, 4-[3',5'-bis-

trifluoromethylphenyl]indenyl).hafnium dimethyl;

9-silafluorendiyl(2-sec-butyl, 4-[3',5'-bis-

trifluoromethylphenyl]indenyl),hafnium dimethyl;

9-silafluorendiyl(2-tert-butyl, 4-[3',5'-bis-

trifluoromethylphenyl]indenyl);hafnium dimethyl;

dimethylsiladiyl(2-ethyl, 4-[3',5'-di-iso-propylphenyl]indenyl)₂zirconium dichloride:

dimethylsiladiyl(2-n-propyl, 4-[3',5'-di-iso-

propylphenyl]indenyl),zirconium dichloride

dimethylsiladiyl(2-iso-propyl, 4-[3',5'-di-iso-

propylphenyl]indenyl),zirconium dichloride:

dimethylsiladiyl(2-n-butyl, 4-[3',5'-di-iso-propylphenyl]indenyl)₂zirconium dichloride:

dimethylsiladiyl(2-iso-butyl, 4-[3',5'-di-iso-

propylphenyl]indenyl),zirconium dichloride:

dimethylsiladiyl(2-sec-butyl, 4-J3',5'-di-iso-

propylphenyl]indenyl)2zirconium dichloride;

dimethylsiladiyl(2-tert-butyl, 4-[3',5'-di-iso-

propylphenyl]indenyl]₂zirconium dichloride; dimethylsiladiyl(2-ethyl, 4-[3',5'-di-iso-propylphenyl]indenyl)₂hafnium

dichloride;

dimethylsiladiyl
(2-n-propyl, 4-[3',5'-di-iso-propylphenyl]
jindenyl) $_2{\rm hafnium}$ dichloride;

dimethylsiladiyl(2-iso-propyl, 4-[3',5'-di- iso-propylphenyl]indenyl)

hafnium dichloride:

dimethylsiladiyl(2-n-butyl, 4-[3',5'-di- iso-propylphenyl]indenyl)₂hafnium dichloride:

dimethylsiladiyl(2-iso-butyl, 4-[3',5'-di- iso-propylphenyl)indenyl)

2hafnium dichloride;

dimethylsiladiyl(2-sec-butyl, 4-[3',5'-di- iso-propylphenyl]indenyl) ,hafnium dichloride;

dimethylsiladiyl(2-tert-butyl, 4-[3',5'-di- iso-propylphenyl]indenyl)
shafnium dichloride:

9-silafluorendiyl(2-ethyl, 4-[3',5'-di-iso-propylphenyl]indenyl) $_2$ zirconium dichloride:

9-silafluorendiyl(2-n-propyl, 4-[3',5'-di-iso-

propylphenyl]indenyl)2zirconium dichloride;

9-silafluorendiyl(2-iso-propyl, 4-[3',5'-di-iso-

propylphenyl]indenyl)2zirconium dichloride;

9-silafluorendiyl(2-n-butyl, 4-[3',5'-di-iso-

propylphenyl]indenyl)2zirconium dichloride;

9-silafluorendiyl(2-iso-butyl, 4-[3',5'-di-iso-

propylphenyl]indenyl)2zirconium dichloride;

9-silafluorendiyl(2-sec-butyl, 4-[3',5'-di-isopropylphenyl]indenyl),zirconium dichloride;

9-silafluorendiyl(2-tert-butyl, 4-[3',5'-di-iso-

propylphenyllindenyl) zirconium dichloride:

9-silafluorendiyl
(2-ethyl, 4-[3',5'-di-iso-propylphenyl]indenyl) $_2{\rm hafnium}$ dichloride;

9-silafluorendiyl(2-n-propyl, 4-[3',5'-di-iso-propylphenyl]indenyl) $_2$ hafnium dichloride;

9-silafluorendiyl(2-iso-propyl, 4-[3',5'-di-iso-

propylphenyl]indenyl)2hafnium dichloride;

9-silafluorendiyl(2-n-butyl, 4-[3',5'-di-iso-propylphenyl]indenyl)₂hafnium dichloride:

9-silafluorendiyl(2-iso-butyl, 4-[3',5'-di-iso-

propylphenyl indenyl) hafnium dichloride:

9-silafluorendiyl(2-sec-butyl, 4-[3',5'-di-iso-

propylphenyl]indenyl);hafnium dichloride;

9-silafluorendiyl(2-tert-butyl, 4-[3',5'-di-iso-

propylphenyl]indenyl)2hafnium dichloride;

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dimethylsiladiyl(2-ethyl, 4-[3',5'-di-iso-propylphenyl]indenyl),zirconium
dimethyl:
dimethylsiladiyl(2-n-propyl, 4-[3',5'-di-iso-
propylphenyllindenyl), zirconium dimethyl
dimethylsiladiyl(2-iso-propyl, 4-[3',5'-di-iso-
propylphenyl]indenyl),zirconium dimethyl;
dimethylsiladiyl(2-n-butyl, 4-[3',5'-di-iso-propylphenyl]indenyl)2zirconium
dimethyl:
dimethylsiladiyl(2-isobutyl, 4-[3',5'-di-iso-
propylphenyllindenyl) zirconium dimethyl;
dimethylsiladiyl(2-sec-butyl, 4-[3',5'-di-iso-
propylphenyllindenyl), zirconium dimethyl;
dimethylsiladiyl(2-tert-butyl, 4-[3',5'-di-iso-
propylphenyl]indenyl)2zirconium dimethyl;
dimethylsiladiyl(2-ethyl, 4-[3',5'-di-iso-propylphenyl]indenyl) 2hafnium
dimethyl:
dimethylsiladiyl(2-n-propyl, 4-[3',5'-di- iso-propylphenyl]indenyl)
hafnium dimethyl:
dimethylsiladiyl(2-iso-propyl, 4-[3',5'-di-iso-propylphenyl]indenyl)
hafnium dimethyl;
dimethylsiladiyl(2-n-butyl, 4-[3',5'-di-iso-propylphenyl]indenyl) hafnium
dimethyl;
dimethylsiladiyl(2-iso-butyl, 4-[3',5'-di-iso-
propylphenyllindenyl),zirconium dimethyl;
dimethylsiladiyl(2-sec-butyl, 4-I3',5'-di-iso-
propylohenyllindenyl), zirconium dimethyl;
dimethylsiladiyl(2-tert-butyl, 4-[3',5'-di-iso-
propylphenyl]indenyl)2zirconium dimethyl;
9-silafluorendiyl(2-ethyl, 4-[3',5'-di-iso-propylphenyl]indenyl),zirconium
dimethyl:
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9-silafluorendivl(2-n-propvl, 4-[3',5'-di-isopropylphenyllindenyl), zirconium dimethyl: 9-silafluorendiyl(2-iso-propyl, 4-[3',5'-di-isopropylphenyl]indenyl),zirconium dimethyl; 9-silafluorendiyl(2-n-butyl, 4-[3',5'-di-isopropylphenyl]indenyl),zirconium dimethyl; 9-silafluorendiyl(2-iso-butyl, 4-[3',5'-di-isopropylphenyl]indenyl),zirconium dimethyl; 9-silafluorendiyl(2-sec-butyl, 4-[3',5'-di-isopropylphenyl]indenyl),zirconium dimethyl; 9-silafluorendiyl(2-tert-butyl, 4-[3',5'-di-isopropylphenyllindenyl), zirconium dimethyl; 9-silafluorendiyl(2-ethyl, 4-[3',5'-di-iso-propylphenyl]indenyl) hafnium dimethyl; 9-silafluorendiyl(2-n-propyl, 4-[3',5'-di-iso-propylphenyl]indenyl).hafnium dimethyl: 9-silafluorendiyl(2-iso-propyl, 4-[3',5'-di-isopropylphenyl]indenyl),hafnium dimethyl; 9-silafluorendiyl(2-n-butyl, 4-[3',5'-di-iso-propylphenyl]indenyl),hafnium dimethyl: 9-silafluorendiyl(2-iso-butyl, 4-[3',5'-di-isopropylphenyl]indenyl).hafnium dimethyl: 9-silafluorendiyl(2-sec-butyl, 4-[3',5'-di-isopropylphenyl]indenyl),hafnium dimethyl; 9-silafluorendiyl(2-tert-butyl, 4-[3',5'-di-isopropylphenyl]indenyl).hafnium dimethyl; dimethylsiladiyl(2-methyl, 4-[3',5'-di-phenyl)henyl)indenyl),zirconium dichloride: dimethylsiladiyl(2-ethyl, 4-[3',5'-di-phenylphenyl]indenyl),zirconium

dichloride:

dimethylsiladiyl(2-n-propyl, 4-[3',5'-di-phenylphenyl]indenyl),zirconium dichloride:

dimethylsiladiyl(2-iso-propyl, 4-[3*,5'-di-phenylphenyl]indenyl),zirconium dichloride;

 $\label{limit} dimethylsiladiyl(2-n-butyl, 4-[3',5'-di-phenylphenyl] indenyl)_z zirconium \\ dichloride;$

dimethylsiladiyl(2-iso-butyl, 4-[3',5'-di-phenylphenyl]indenyl),zirconium dichloride;

dimethylsiladiyl(2-sec-butyl, 4-[3',5'-di-phenylphenyl]indenyl)₂zirconium dichloride:

dimethylsiladiyl(2-tert-butyl, 4-[3',5'-di-phenylphenyl]indenyl),zirconium dichloride:

dimethylsiladiyl(2-methyl, 4-[3',5'-di-phenylphenyl]indenyl),hafnium dichloride;

dimethylsiladiyl(2-ethyl, 4-[3',5'-di-phenylphenyl]indenyl),hafnium dichloride;

dimethylsiladiyl(2-n-propyl, 4-[3',5'-di-phenylphenyl]indenyl)₂hafnium

dimethylsiladiyl(2-iso-propyl, 4-[3',5'-di-phenyl]henyl]indenyl),hafnium dichloride:

dimethylsiladiyl(2-n-butyl, 4-[3',5'-di-phenylphenyl]indenyl),hafnium dichloride:

dimethylsiladiyl(2-iso-butyl, 4-[3',5'-di-phenylphenyl]indenyl)₂hafnium dichloride:

dimethylsiladiyl(2-sec-butyl, 4-[3',5'-di-phenylphenyl]indenyl)₂hafnium dichloride:

dimethylsiladiyl(2-tert-butyl, 4-[3',5'-di-phenylphenyl]indenyl)₂hafnium dichloride:

9-silafluorendiyl(2-methyl, 4-[3',5'-di-phenylphenyl]indenyl),zirconium dichloride;

- 9-silafluorendiyl(2-ethyl, 4-[3',5'-di-phenylphenyl]indenyl)₂zirconium dichloride;
- 9-sil a fluorendiyl (2-n-propyl, 4-[3',5'-di-phenylphenyl] indenyl), zirconium dichloride;
- $9-silafluorendiyl (2-iso-propyl, 4-[3',5'-di-phenylphenyl] indenyl)_z zirconium dichloride;$
- $9-sil a fluorendiyl (2-n-butyl, 4-[3',5'-di-phenylphenyl] indenyl)_z zirconium dichloride; \\$
- $9-silafluorendiyl (2-iso-butyl, 4-[3',5'-di-phenylphenyl] indenyl)_z zirconium dichloride; \\$
- 9-silafluorendiyl(2-sec-butyl, 4-[3',5'-di-phenylphenyl]indenyl)₂zirconium dichloride:
- 9-silafluorendiyl
(2-tert-butyl, 4-[3',5'-di-phenylphenyl]indenyl),
zirconium dichloride;
- 9-silafluorendiyl(2-methyl, 4-[3',5'-di-phenylphenyl]indenyl),hafnium dichloride:
- 9-silafluorendiyl(2-ethyl, 4-[3',5'-di-phenylphenyl]indenyl) $_2$ hafnium

dichloride:

- 9-silafluorendiyl(2-n-propyl, 4-[3',5'-di-phenylphenyl]indenyl),hafnium dichloride:
- 9-silafluorendiyl(2-iso-propyl, 4-[3',5'-di-phenylphenyl]indenyl)₂hafnium dichloride:
- 9-silafluorendiyl(2-n-butyl, 4-[3',5'-di-phenylphenyl]indenyl)₂hafmium dichloride:
- 9-silafluorendiyl(2-iso-butyl, 4-[3',5'-di-phenylphenyl]indenyl),hafmium dichloride:
- 9-silafluorendiyl(2-sec-butyl, 4-[3',5'-di-phenylphenyl]indenyl)2hafnium dichloride:
- 9-silafluorendiyl(2-tert-butyl, 4-[3',5'-di-phenylphenyl]indenyl),hafnium dichloride;

- dimethylsiladiyl(2-methyl, 4-[3',5'-di-phenylphenyl]indenyl)₂zirconium dimethyl:
- dimethylsiladiyl(2-n-propyl, 4-[3',5'-di-phenylphenyl]indenyl)₂zirconium dimethyl;
- dimethylsiladiyl(2-iso-propyl, 4-[3',5'-di-phenylphenyl]indenyl)₂zirconium dimethyl;
- dimethylsiladiyl(2-n-butyl, 4-[3',5'-di-phenylphenyl]indenyl)₂zirconium dimethyl;
- dimethylsiladiyl(2-iso-butyl, 4-[3',5'-di-phenylphenyl]indenyl)₂zirconium dimethyl;
- dimethylsiladiyl(2-sec-butyl, $4-[3',5'-di-phenylphenyl]indenyl)_z$ zirconium dimethyl:
- $\label{lem:dimethyl} dimethyl siladiyl (2-tert-butyl, 4-[3',5'-di-phenyl phenyl] indenyl), zirconium dimethyl;$
- $\label{limit} {\it dimethylsiladiyl(2-methyl, 4-[3',5'-di-phenylphenyl]indenyl)}_2 hafnium \\ {\it dimethyl;}$
- dimethylsiladiyl(2-ethyl, 4-[3',5'-di-phenylphenyl]indenyl)₂hafnium dimethyl:
- dimethylsiladiyl(2-n-propyl, 4-[3',5'-di-phenylphenyl]indenyl)₂hafnium dimethyl;
- dimethylsiladiyl(2-iso-propyl, 4-[3',5'-di-phenylphenyl]indenyl)₂hafnium dimethyl;
- dimethylsiladiyl(2-n-butyl, 4-[3',5'-di-phenylphenyl]indenyl),hafnium dimethyl:
- dimethylsiladiyl(2-iso-butyl, 4-[3',5'-di-phenylphenyl]indenyl)₂hafnium dimethyl:
- dimethylsiladiyl(2-sec-butyl, 4-[3',5'-di-phenylphenyl]indenyl)₂hafnium dimethyl;

- $\label{limit} dimethyl siladiyl (2-tert-butyl, 4-[3',5'-di-phenylphenyl] indenyl)_2 hafnium \\ dimethyl;$
- $9-silafluorendiyl (2-methyl, 4-[3',5'-di-phenylphenyl] indenyl)_{2} zirconium \\ dimethyl;$
- 9-silafluorendiyl(2-ethyl, 4-[3',5'-di-phenylphenyl]indenyl)₂zirconium dimethyl:
- 9-silafluorendiyl(2-n-propyl, $4-[3',5'-di-phenylphenyl]indenyl)_zzirconium dimethyl;$
- $9-sil a fluorendiyl (2-iso-propyl, 4-[3',5'-di-phenyl]phenyl] indenyl)_z zirconium dimethyl;$
- 9-silafluorendiyl(2-n-butyl, 4-[3',5'-di-phenylphenyl]indenyl);zirconium dimethyl;
- 9-silafluorendiyl(2-iso-butyl, 4-[3',5'-di-phenylphenyl]indenyl),zirconium dimethyl;
- 9-silafluorendiyl(2-sec-butyl, 4-[3',5'-di-phenylphenyl]indenyl)₂zirconium dimethyl;
- $9-sil a fluor endiyl (2-tert-butyl, 4-[3',5'-di-phenyl] indenyl)_{z} zirconium \\ dimethyl;$
- 9-silafluorendiyl(2-methyl, 4-[3',5'-di-phenylphenyl]indenyl)₂hafnium dimethyl;
- 9-silafluorendiyl(2-ethyl, 4-[3',5'-di-phenylphenyl]indenyl)₂hafnium dichloride:
- 9-silafluorendiyl(2-n-propyl, 4-[3',5'-di-phenylphenyl]indenyl),hafnium dimethyl;
- 9-silafluorendiyl(2-iso-propyl, 4-[3',5'-di-phenylphenyl]indenyl)₂hafnium dimethyl:
- 9-silafluorendiyl(2-n-butyl, 4-[3',5'-di-phenylphenyl]indenyl)₂hafnium dimethyl;
- 9-silafluorendiyl(2-iso-butyl, 4-[3',5'-di-phenylphenyl]indenyl),hafnium dimethyl;

9-silafluorendiyl(2-sec-butyl, 4-[3',5'-di-phenylphenyl]indenyl),hafnium dimethyl:

9-silafluorendiyl(2-tert-butyl, 4-[3',5'-di-phenyl]henyl]indenyl)₂hafnium dimethyl;

dimethylsiladiyl(2-methyl, 4-[3 4 ,5 4 -di-tbutylphenyl]indenyl) $_{2}$ η^{4} -1,4-diphenyl-1,3-butadiene;

 ${\rm dimethyl siladiyl}(2{\rm -ethyl},\,4{\rm -}[3',5'{\rm -di-tbutyl phenyl}]{\rm indenyl})_2\,\eta^4{\rm -}1,4{\rm -}$

diphenyl-1,3-butadiene; dimethylsiladiyl(2-n-propyl, 4-[3',5'-di-tbutylphenyl]indenyl), η⁴-1,4-

dimenylshamyu,2-n-propyl, 4-[5,5-un-toutylphenyl]hudenyl,2-[-1,4-diphenyl-1,3-butadiene;

dimethylsiladiyl(2-iso-propyl, 4-[3',5'-di-tbutylphenyl]indenyl) $_2$ η^4 -1,4-diphenyl-1.3-butadiene:

dimethylsiladiyl(2-n-butyl, 4-[3',5'-di-tbutylphenyl]lindenyl) $_2$ η^4 -1,4-diphenyl-1.3-butadiene:

dimethylsiladiyl(2-iso-butyl, 4-[3',5'-di-tbutylphenyl]indenyl) $_2$ η^4 -1,4-diphenyl-1,3-butadiene;

dimethylsiladiyl(2-sec-butyl, 4-[3',5'-di-tbutylphenyl]indenyl) $_2$ η^4 -1,4-diphenyl-1,3-butadiene:

dimethylsiladiyl(2-tert-butyl, 4-[3',5'-di-tbutylphenyl]indenyl) $_2$ η^4 -1,4-diphenyl-1.3-butadiene:

dimethylsiladiyl(2-ethyl, 4-[3',5'-bis-trifluoromethylphenyl]indenyl) $_2$ η^4 -1,4-diphenyl-1,3-butadiene;

dimethylsiladiyl(2-n-propyl, 4-[3',5'-bis-trifluoromethylphenyl]indenyl)₂ n⁴-1.4-diphenyl-1.3-butadiene:

dimethylsiladiyl(2-iso-propyl, 4-[3',5'-bis- trifluoromethylphenyl]indenyl)₂ n⁴-1.4-diphenyl-1.3-butadiene:

 $\label{theorem:limit} dimethyl siladiyl (2-n-butyl, 4-[3',5'-bis-trifluoromethyl phenyl] indenyl)_2 \eta^4-1,4-diphenyl-1,3-butadiene;$

dimethylsiladiyl(2-iso-butyl, 4-[3',5'-bis-trifluoromethylphenyl]indenyl)₂ η^4 -1,4-diphenyl-1,3-butadiene:

dimethylsiladiyl(2-sec-butyl, 4-[3',5'-bis-trifluoromethylphenyl]indenyl), n4-1,4-diphenyl-1,3-butadiene:

dimethylsiladiyl(2-tert-butyl, 4-[3',5'-bis-trifluoromethylphenyl]jindenyl), n4-1,4-diphenyl-1,3-butadiene:

dimethylsiladiyl(2-ethyl, 4-[3',5'-di-iso-propylphenyl]indenyl) $_2\eta^4$ -1,4-diphenyl-1,3-butadiene:

dimethylsiladiyl(2-n-propyl, 4-[3',5'-di-iso-propylphenyl]indenyl) $_2$ η^4 -1,4-diphenyl-1,3-butadiene:

dimethylsiladiyl(2-iso-propyl, 4-[3',5'-di-iso-propylphenyl]indenyl) η^4 -1,4-diphenyl-1,3-butadiene;

dimethylsiladiyl(2-n-butyl, 4-[3',5'-di-iso-propylphenyl]indenyl) $_2$ η^4 -1,4-diphenyl-1,3-butadiene;

dimethylsiladiyl(2-iso-butyl, 4-[3',5'-di-iso-propylphenyl]indenyl) $_2$ η^4 -1,4-diphenyl-1.3-butadiene:

dimethylsiladiyl(2-sec-butyl, 4-[3',5'-di-iso-propylphenyl]indenyl) $_2$ η^4 -1,4-diphenyl-1,3-butadiene:

dimethylsiladiyl(2-tert-butyl, 4-[3',5'-di-iso-propylphenyl]jindenyl) $_2$ η^4 -1,4-diphenyl-1,3-butadiene;

dimethylsiladiyl(2-methyl, 4-[3',5'-di-phenylphenyl]indenyl)₂ η^4 -1,4-diphenyl-1,3-butadiene;

dimethylsiladiyl(2-ethyl, 4-[3',5'-di-phenylphenyl]indenyl) $_2$ η^4 -1,4-diphenyl-1,3-butadiene:

 $dimethylsiladiyl(2-n-propyl, 4-[3',5'-di-phenylphenyl]indenyl)_2 \eta^4-1, 4-diphenyl-1, 3-butadiene; \\$

dimethylsiladiyl(2-iso-propyl, 4-[3',5'-di-phenylphenyl]indenyl), η^4 -1,4-diphenyl-1,3-butadiene;

- dimethylsiladiyl(2-n-butyl, 4-[3',5'-di-phenylphenyl]indenyl)₂ η^4 -1,4-diphenyl-1,3-butadiene;
- dimethylsiladiyl(2-iso-butyl, 4-[3',5'-di-phenylphenyl]indenyl) $_2$ η^4 -1,4-diphenyl-1,3-butadiene;
- dimethylsiladiyl(2-sec-butyl, 4-[3',5'-di-phenylphenyl]indenyl) $_2$ η^4 -1,4-diphenyl-1,3-butadiene;
- dimethylsiladiyl(2-tert-butyl, 4-[3',5'-di-phenylphenyl]indenyl)₂ η^4 -1,4-diphenyl-1.3-butadiene:
- 9-sìlafluorendiyl
(2-methyl, 4-[3',5'-di-tbutylphenyl]indenyl), η^4 -1,4-
- diphenyl-1,3-butadiene;
 9-silafluorendiyl(2-ethyl, 4-f3',5'-di-tbutylphenyllindenyl), n'-1,4-
- diphenyl-1,3-butadiene;
 9-silafluorendiyl(2-n-propyl, 4-[3',5'-di-tbutylphenyllindenyl), n⁴-1,4-
- y-snamuorencuyi(,2-n-propyi, 4-[3-,3-cn-touty)pnenyi]pndenyi]₂ η -1,4 diphenyi-1,3-butadiene;
- 9-silafluorendiyl(2-iso-propyl, 4-[3',5'-di-tbutylphenyl]indenyl) $_2$ η^4 -1,4-diphenyl-1,3-butadiene;
- 9-silafluorendiyl(2-n-butyl, 4-[3',5'-di-tbutylphenyl]indenyl) $_2$ η^4 -1,4-diphenyl-1,3-butadiene;
- 9-silafluorendiyl(2-iso-butyl, 4-[3',5'-di-tbutylphenyl]indenyl) $_2$ η^4 -1,4-diphenyl-1.3-butadiene:
- 9-silafluorendiyl(2-sec-butyl, 4-[3',5'-di-tbutylphenyl]indenyl] $_2$ η^4 -1,4-diphenyl-1.3-butadiene:
- 9-silafluorendiyl(2-tert-butyl, 4-[3',5'-di-tbutylphenyl]indenyl) $_2\eta^4$ -1,4-diphenyl-1,3-butadiene:
- 9-silafluorendiyl(2-ethyl, 4-[3',5'-bis-trifluoromethylphenyl]jindenyl) $_2$ η^4 -1,4-diphenyl-1,3-butadiene;
- 9-silafluorendiyl(2-n-propyl, 4-[3',5'-bis-trifluoromethylphenyl]indenyl), η^4 -1,4-diphenyl-1,3-butadiene;

- 9-silafluorendiyl(2-iso-propyl, 4-[3',5'-bis-trifluoromethylphenyl]indenyl)₂ η^4 -1,4-diphenyl-1,3-butadiene; 9-silafluorendiyl(2-n-butyl, 4-[3',5'-bis-trifluoromethylphenyl]indenyl)₂ η^4 -1,4-diphenyl-1,3-butadiene:
- 9-silafluorendiyl(2-iso-butyl, 4-[3',5'-bis-trifluoromethylphenyl]indenyl)₂
- 9-siarutorendyi(2-iso-butyi, 4-[3-,3-bis-rrittuoromethylphenyi]indenyi) η⁴-1,4-diphenyi-1,3-butadiene;
- 9-silaftuorendiyl(2-sec-butyl, 4-[3',5'-bis-trifluoromethylphenyl]indenyl)₂ n⁴-1.4-diphenyl-1.3-butadiene:
- 9-silafluorendiyl(2-tert-butyl, 4-[3',5'-bis-trifluoromethylphenyl]jindenyl)₂ n⁴-1.4-diphenyl-1.3-butadiene:
- 9-silafluorendiyl(2-ethyl, 4-[3',5'-di-iso-propylphenyl]indenyl) $_2$ η^4 -1,4-diphenyl-1,3-butadiene;
- 9-silafluorendiyl(2-n-propyl, 4-[3',5'-di-iso-propylphenyl]indenyl) $_2$ η^4 -1,4-diphenyl-1,3-butadiene;
- 9-silafluorendiyl(2-iso-propyl, 4-[3',5'-di-iso-propylphenyl]indenyl) η^4 -I,4-diphenyl-I,3-butadiene;
- 9-silafluorendiyl
(2-n-butyl, 4-[3',5'-di-iso-propylphenyl]
jindenyl), η^4 -1,4-diphenyl-1,3-butadiene;
- 9-silafluorendiyl(2-iso-butyl, 4-[3',5'-di-iso-propylphenyl]indenyl) $_2$ η^4 -1,4-diphenyl-1,3-butadiene;
- 9-silafluorendiyl(2-sec-butyl, 4-[3',5'-di-iso-propylphenyl]indenyl) $_2$ η^4 -1,4-diphenyl-1,3-butadiene;
- 9-silafluorendiyl(2-tert-butyl, 4-[3',5'-di-iso-propylphenyl]indenyl) $_2$ η^4 -1,4-diphenyl-1,3-butadiene;
- 9-silafluorendiyl(2-methyl, 4-[3',5'-di-phenylphenyl]indenyl)₂ η⁴-1,4-diphenyl-1,3-butadiene;
- 9-silaftuorendiyl(2-ethyl, 4-[3',5'-di-phenylphenyl]indenyl) $_2$ η^4 -1,4-diphenyl-1,3-butadiene;

9-silafluorendiyl(2-n-propyl, 4-[3',5'-di-phenylphenyl]indenyl)₂ η⁴-1,4diphenyl-1,3-butadiene;

9-silafluorendiyl(2-iso-propyl, 4-[3',5'-di-phenylphenyl]indenyl) $_2$ η^4 -1,4-diphenyl-1,3-butadiene;

9-silafluorendiyl(2-n-bufyl, 4-[3',5'-di-phenylphenyl]indenyl), η^4 -1,4-diphenyl-1,3-butadiene;

9-silafluorendiyl(2-iso-butyl, 4-[3',5'-di-phenylphenyl]indenyl) $_2\eta^4$ -1,4-diphenyl-1,3-butadiene;

9-silafluorendiyl(2-sec-butyl, 4-[3',5'-di-phenylphenyl]indenyl) $_2$ η^4 -1,4-diphenyl-1,3-butadiene;

9-silafluorendiyl(2-tert-butyl, 4-[3',5'-di-phenylphenyl]indenyl) $_2$ η^4 -1,4-diphenyl-1,3-butadiene:

dimethylamidoborane(2-methyl, 4-[3',5'-di-

tbutylphenyl]indenyl)2zirconium dichloride;

 $\label{limited} dimethylamidoborane (2-ethyl, 4-[3',5'-di-tbutylphenyl] indenyl)_z zirconium \\ dichloride;$

dimethylamidoborane(2-n-propyl, 4-[3',5'-di-

tbutylphenyl]indenyl)2zirconium dichloride;

dimethylamidoborane(2-iso-propyl, 4-[3',5'-di-

tbutylphenyl]indenyl),zirconium dichloride;

dimethylamidoborane(2-n-butyl, 4-[3',5'-di-

tbutylphenyl]indenyl)2zirconium dichloride;

dimethylamidoborane(2-iso-butyl, 4-[3',5'-di-

tbutylphenyllindenyl)-zirconium dichloride:

dimethylamidoborane(2-sec-butyl, 4-[3',5'-di-

tbutylphenyl]indenyl),zirconium dichloride:

dimethylamidoborane(2-tert-butyl, 4-[3',5'-di-

tbutylphenyl]indenyl),zirconium dichloride:

dimethylamidoborane(2-ethyl, 4-[3',5'-bis-

trifluoromethylphenyl]indenyl),zirconium dichloride:

dimethylamidoborane(2-n-propyl, 4-[3',5'-bistrifluoromethylphenyl]indenyl),zirconium dichloride; dimethylamidoborane(2-iso-propyl, 4-13'.5'-bistrifluoromethylphenyl]indenyl),zirconium dichloride; dimethylamidoborane(2-n-butyl, 4-13',5'-bistrifluoromethylphenyllindenyl).zirconium dichloride; dimethylamidoborane(2-iso-butyl, 4-[3',5'-bistrifluoromethylphenyllindenyl),zirconium dichloride: dimethylamidoborane(2-sec-butyl, 4-f3',5'-bistrifluoromethylphenyllindenyl),zirconium dichloride: dimethylamidoborane(2-tert-butyl, 4-13',5'-bistrifluoromethylphenyllindenyl),zirconium dichloride: dimethylamidoborane(2-ethyl, 4-[3',5'-di-isopropylphenyl]indenyl),zirconium dichloride; dimethylamidoborane(2-n-propyl, 4-[3',5'-di-isopropylphenyl]indenyl),zirconium dichloride dimethylamidoborane(2-iso-propyl, 4-[3',5'-di-isopropylphenyllindenyl), zirconium dichloride; dimethylamidoborane(2-n-butyl, 4-[3',5'-di-isopropylphenyllindenyl), zirconium dichloride; dimethylamidoborane(2-iso-butyl, 4-[3',5'-di-isopropylphenyllindenyl), zirconium dichloride; dimethylamidoborane(2-sec-butyl, 4-[3',5'-di-isopropylphenyl]indenyl),zirconium dichloride; dimethylamidoborane(2-tert-butyl, 4-13',5'-di-isopropylphenyllindenyl).zirconium dichloride: dimethylamidoborane(2-methyl, 4-I3',5'-diphenylphenyllindenyl), zirconium dichloride: dimethylamidoborane(2-ethyl, 4-13',5'-di-phenylphenyllindenyl),zirconium dichloride;

dimethylamidoborane(2-n-propyl, 4-[3',5'-diphenylphenyl]indenyl),zirconium dichloride; dimethylamidoborane(2-iso-propyl, 4-[3',5'-diphenylphenyl]indenyl),zirconium dichloride; dimethylamidoborane(2-n-butyl, 4-[3',5'-diphenylphenyl]indenyl),zirconium dichloride; dimethylamidoborane(2-iso-butyl, 4-[3',5'-diphenylphenyl]indenyl),zirconium dichloride; dimethylamidoborane(2-sec-butyl, 4-[3',5'-diphenylphenyl]indenyl),zirconium dichloride; dimethylamidoborane(2-tert-butyl, 4-[3',5'-diphenylphenyl]indenyl),zirconium dichloride;

dimethylamidoborane(2-methyl, 4-[3',5'-di-tbutylphenyl]jindenyl) $_2$ η^4 -1,4-diphenyl-1,3-butadiene;

 $\label{eq:dimethylamidoborane} dimethylamidoborane (2-ethyl, 4-[3',5'-di-tbutylphenyl] indenyl]_2 \eta^4-1,4-diphenyl-1,3-butadiene;$

 $\label{eq:dimethylamidoborane} dimethylamidoborane (2-n-propyl, 4-[3',5'-di-tbutylphenyl] indenyl)_2 \eta^4-1, 4-diphenyl-1, 3-butadiene;$

dimethylamidoborane (2-iso-propyl, 4-[3',5'-di-tbutylphenyl]
indenyl), η^4 -1,4-diphenyl-1,3-butadiene;

dimethylamidoborane(2-n-butyl, 4-[3',5'-di-tbutylphenyl]jindenyl) $_2$ η^4 -1,4-diphenyl-1,3-butadiene;

dimethylamidoborane (2-iso-butyl, 4-[3',5'-di-tbutylphenyl]indenyl), η^4 -1,4-diphenyl-1,3-butadiene;

dimethylamidoborane(2-sec-butyl, 4-[3',5'-di-tbutylphenyl]indenyl)₂ η^4 -1,4-diphenyl-1,3-butadiene;

dimethylamidoborane(2-tert-butyl, 4-[3 $^{\circ}$,5 $^{\circ}$ -di-fbutylphenyl]jindenyl)₂ η^4 -1,4-diphenyl-1,3-butadiene;

 $\label{eq:dimethylamidoborane} dimethylamidoborane (2-ethyl, 4-[3',5'-bis-trifluoromethylphenyl] indenyl)_2 $$\eta^4-1,4-diphenyl-1,3-butadiene;$

dimethylamidoborane(2-n-propyl, 4-[3',5'-bis-

trifluoromethylphenyl]indenyl), n4-1,4-diphenyl-1,3-butadiene;

dimethylamidoborane(2-iso-propyl, 4-[3',5'-bis-

trifluoromethylphenyl]indenyl), n4-1,4-diphenyl-1,3-butadiene;

dimethylamidoborane(2-n-butyl, 4-[3',5'-bis-

trifluoromethylphenyl]indenyl) $_{2}$ η^{4} -1,4-diphenyl-1,3-butadiene;

dimethylamidoborane(2-iso-butyl, 4-[3',5'-bis-trifluoromethylphenyl]indenyl), η^4 -1,4-diphenyl-1,3-butadiene;

umicoromemyrphenyrjindenyr)₂η -1,4-dipnenyr-1,3-buramene

dimethylamidoborane(2-sec-butyl, 4-[3',5'-bis-

trifluoromethylphenyl]indenyl) $_{2}\eta^{4}$ -1,4-diphenyl-1,3-butadiene;

dimethylamidoborane(2-tert-butyl, 4-[3',5'-bis-

trifluoromethylphenyl]indenyl), n4-1,4-diphenyl-1,3-butadiene;

 $dimethylamidoborane (2-ethyl, 4-[3',5'-di-iso-propylphenyl] indenyl)_2\,\eta^4-$

1,4-diphenyl-1,3-butadiene;

dimethylamidoborane(2-n-propyl, 4-[3',5'-di-iso-propylphenyl]indenyl) $_2$

η⁴-1,4-diphenyl-1,3-butadiene;

 $\label{eq:dimethylamidoborane (2-iso-propyl, 4-[3',5'-di-iso-propylphenyl] indenyl)} η^4-1,4-diphenyl-1,3-butadiene;$

dimethylamidoborane(2-n-butyl, 4-[3',5'-di-iso-propylphenyl]indenyl), n4-

1,4-diphenyl-1,3-butadiene; dimethylamidoborane(2-iso-butyl, 4-[3',5'-di-iso-propylphenyl]indenyl),

n4-1.4-diphenyl-1.3-butadiene:

dimethylamidoborane(2-sec-butyl, 4-[3',5'-di-iso-propylphenyl]indenyl),

n4-1,4-diphenyl-1,3-butadiene:

dimethylamidoborane(2-tert-butyl, 4-[3',5'-di-iso-propylphenyl]indenyl)2

η⁴-1,4-diphenyl-1,3-butadiene;

dimethylamidoborane(2-methyl, 4-[3',5'-di-phenylphenyl]indenyl) $_2$ η^4 -1,4-

diphenyl-1,3-butadiene;

dimethylamidoborane(2-ethyl, 4-[3',5'-di-phenylphenyl]indenyl) $_2$ η^4 -1,4-diphenyl-1,3-butadiene;

dimethylamidoborane(2-n-propyl, 4-[3',5'-di-phenylphenyl]indenyl), η^4 -

1.4-diphenyl-1,3-butadiene;

 $dimethylamidoborane (2-iso-propyl, 4-[3',5'-di-phenylphenyl] indenyl)_2\,\eta^4-$

1,4-diphenyl-1,3-butadiene;

dimethylamidoborane(2-n-butyl, 4-[3',5'-di-phenylphenyl]indenyl) $_2$ η^4 -1,4-

diphenyl-1,3-butadiene;

zirconium dimethyl:

dimethylamidoborane(2-iso-butyl, 4-[3',5'-di-phenylphenyl]indenyl)₂ η⁴-

1,4-diphenyl-1,3-butadiene;

dimethylamidoborane(2-sec-butyl, 4-[3',5'-di-phenylphenyl])indenyl), η^4 -1,4-diphenyl-1,3-butadiene;

dimethylamidoborane(2-tert-butyl, 4-[3',5'-di-phenylphenyl]indenyl)₂ η^4 -1.4-divhenyl-1.3-butadiene:

 $dimethylamidoborane (2-methyl, 4-[3',5'-di-tbutylphenyl] indenyl)_2 \\$

dimethylamidoborane(2-ethyl, 4-[3',5'-di-tbutylphenyl]indenyl)₂zirconium dimethyl:

dimethylamidoborane(2-n-propyl, 4-[3',5'-di-

thutylphenyllindenyl),zirconium dimethyl;

dimethylamidoborane(2-iso-propyl, 4-[3',5'-di-

tbutylphenyl]indenyl)2zirconium dimethyl;

dimethylamidoborane(2-n-butyl, 4-[3',5'-di-

tbutylphenyl]indenyl)2zirconium dimethyl;

dimethylamidoborane(2-iso-butyl, 4-[3',5'-di-

tbutylphenyl]indenyl)2zirconium dimethyl;

dimethylamidoborane(2-sec-butyl, 4-[3',5'-di-

 $tbutylphenyl] indenyl)_2 zirconium\ dimethyl;$

dimethylamidoborane(2-tert-butyl, 4-[3',5'-di-

 $tbutylphenyl] indenyl)_2 zirconium\ dimethyl;$

dimethylamidoborane(2-ethyl, 4-13',5'-bistrifluoromethylphenyl]indenyl),zirconium dimethyl; dimethylamidoborane(2-n-propyl, 4-I3',5'-bistrifluoromethylphenyllindenyl) zirconium dimethyl; dimethylamidoborane(2-iso-propyl, 4-[3',5'-bistrifluoromethylphenyllindenyl).zirconium dimethyl; dimethylamidoborane(2-n-butyl, 4-I3',5'-bistrifluoromethylphenyllindenyl).zirconium dimethyl; dimethylamidoborane(2-iso-butyl, 4-[3',5'-bistrifluoromethylphenyllindenyl),zirconium dimethyl; dimethylamidoborane(2-sec-butyl, 4-[3',5'-bistrifluoromethylphenyllindenyl), zirconium dimethyl; dimethylamidoborane(2-tert-butyl, 4-[3',5'-bistrifluoromethylphenyllindenyl),zirconium dimethyl; dimethylamidoborane(2-ethyl, 4-[3',5'-di-isopropylphenyllindenyl), zirconium dimethyl: dimethylamidoborane(2-n-propyl, 4-[3',5'-di-isopropylphenyllindenyl), zirconium dimethyl dimethylamidoborane(2-iso-propyl, 4-[3',5'-di-isopropylphenyl]indenyl),zirconium dimethyl; dimethylamidoborane(2-n-butyl, 4-[3',5'-di-isopropylphenyl]indenyl),zirconium dimethyl; dimethylamidoborane(2-iso-butyl, 4-I3',5'-di-isopropylphenyllindenyl)-zirconium dimethyl; dimethylamidoborane(2-sec-butyl, 4-[3',5'-di-isopropylphenyllindenyl)-zirconium dimethyl: dimethylamidoborane(2-tert-butyl, 4-f3',5'-di-isopropylphenyllindenyl), zirconium dimethyl; dimethylamidoborane(2-methyl, 4-[3',5'-diphenylphenyl]indenyl),zirconium dimethyl;

dimethylamidoborane(2-ethyl, 4-[3',5'-di-phenylphenyl]indenyl);zirconium dimethyl:

dimethylamidoborane(2-n-propyl, 4-[3'.5'-diphenylphenyllindenyl), zirconium dimethyl: dimethylamidoborane(2-iso-propyl, 4-[3',5'-diphenylphenyllindenyl), zirconium dimethyl: dimethylamidoborane(2-n-butyl, 4-[3',5'-diphenylphenyl]indenyl),zirconium dimethyl; dimethylamidoborane(2-iso-butyl, 4-[3',5'-diphenylphenyllindenyl).zirconium dimethyl: dimethylamidoborane(2-sec-butyl, 4-[3',5'-diphenylphenyllindenyl), zirconium dimethyl; dimethylamidoborane(2-tert-butyl, 4-[3',5'-diphenylphenyllindenyl), zirconium dimethyl: diisopropylamidoborane(2-methyl, 4-f3',5'-ditbutylphenyl]indenyl),zirconium dichloride; diisopropylamidoborane(2-ethyl, 4-f3',5'-ditbutylphenyl]indenyl)2zirconium dichloride; diisopropylamidoborane(2-n-propyl, 4-[3',5'-ditbutylphenyllindenyl).zirconium dichloride: diisopropylamidoborane(2-iso-propyl, 4-f3',5'-ditbutylphenyllindenyl),zirconium dichloride; diisopropylamidoborane(2-n-butyl, 4-[3',5'-ditbutylphenyl]indenyl),zirconium dichloride; diisopropylamidoborane(2-iso-butyl, 4-[3',5'-ditbutvlphenyllindenyl),zirconium dichloride: diisopropylamidoborane(2-sec-butyl, 4-[3',5'-ditbutylphenyllindenyl), zirconium dichloride: diisopropylamidoborane(2-tert-butyl, 4-[3',5'-ditbutylphenyllindenyl), zirconium dichloride:

diisopropylamidoborane(2-ethyl, 4-[3',5'-bistrifluoromethylphenyllindenyl),zirconium dichloride; diisopropylamidoborane(2-n-propyl, 4-[3',5'-bistrifluoromethylphenyl]indenyl),zirconium dichloride; diisopropylamidoborane(2-iso-propyl, 4-[3',5'-bistrifluoromethylphenyl]indenyl),zirconium dichloride; diisopropylamidoborane(2-n-butyl, 4-[3',5'-bistrifluoromethylphenyl]indenyl),zirconium dichloride; diisopropylamidoborane(2-iso-butyl, 4-[3',5'-bistrifluoromethylphenyl]indenyl),zirconium dichloride; diisopropylamidoborane(2-sec-butyl, 4-[3',5'-bistrifluoromethylphenyl]indenyl),zirconium dichloride; diisopropylamidoborane(2-tert-butyl, 4-[3',5'-bistrifluoromethylphenyllindenyl),zirconium dichloride; diisopropylamidoborane(2-ethyl, 4-[3',5'-di-isopropylphenyl]indenyl),zirconium dichloride; diisopropylamidoborane(2-n-propyl, 4-[3',5'-di-isopropylphenyl]indenyl),zirconium dichloride diisopropylamidoborane(2-iso-propyl, 4-[3',5'-di-isopropylphenyllindenyl), zirconium dichloride; diisopropylamidoborane(2-n-butyl, 4-f3',5'-di-isopropylphenyllindenyl), zirconium dichloride; diisopropylamidoborane(2-iso-butyl, 4-[3',5'-di-isopropylphenyllindenyl), zirconium dichloride; diisopropylamidoborane(2-sec-butyl, 4-[3',5'-di-isopropylphenyl]indenyl),zirconium dichloride; diisopropylamidoborane(2-tert-butyl, 4-[3',5'-di-isopropylphenyl]indenyl),zirconium dichloride; diisopropylamidoborane(2-methyl, 4-[3',5'-diphenylphenyllindenyl), zirconium dichloride:

diisopropylamidoborane(2-ethyl, 4-[3',5'-diphenylphenyllindenyl), zirconium dichloride; diisopropylamidoborane(2-n-propyl, 4-[3',5'-diphenylphenyl lindenyl), zirconium dichloride; diisopropylamidoborane(2-iso-propyl, 4-[3',5'-diphenylphenyl]indenyl),zirconium dichloride; diisopropylamidoborane(2-n-butyl, 4-[3',5'-diphenylphenyl]indenyl),zirconium dichloride; diisopropylamidoborane(2-iso-butyl, 4-13',5'-diphenylphenyl]indenyl),zirconium dichloride; diisopropylamidoborane(2-sec-butyl, 4-[3',5'-diphenylphenyl]indenyl).zirconium dichloride: diisopropylamidoborane(2-tert-butyl, 4-[3',5'-diphenylphenyllindenyl), zirconium dichloride; diisopropylamidoborane(2-methyl, 4-[3',5'-di-tbutylphenyl]indenyl), η4-1,4-diphenyl-1,3-butadiene; diisopronylamidoborane(2-ethyl, 4-[3',5'-di-tbutylphenyl]indenyl), η4-1,4diphenyl-1.3-butadiene: diisopropylamidoborane(2-n-propyl, 4-[3',5'-di-tbutylphenyl]indenyl), 74-1.4-diphenyl-1.3-butadiene: diisopropylamidoborane(2-iso-propyl, 4-[3',5'-di-tbutylphenyl]indenyl). n4-1.4-diphenyl-1.3-butadiene; diisopropylamidoborane(2-n-butyl, 4-[3',5'-di-tbutylphenyl]indenyl), n4-1,4-diphenyl-1,3-butadiene; diisopropylamidoborane(2-iso-butyl, 4-f3',5'-di-tbutylnhenyllindenyi), n4-1,4-diphenyl-1,3-butadiene; diisopropylamidoborane(2-sec-butyl, 4-[3',5'-di-tbutylphenyl]indenyl), n4-1,4-diphenyl-1,3-butadiene; diisopropylamidoborane(2-tert-butyl, 4-[3',5'-di-tbutylphenyl]indenyl), n'-1.4-diphenyl-1.3-butadiene:

diisopropylamidoborane(2-ethyl, 4-[3',5'-bistrifluoromethylphenyllindenyl), n4-1.4-diphenyl-1.3-butadiene: diisopropylamidoborane(2-n-propyl, 4-[3',5'-bistrifluoromethylphenyllindenyl), n4-1.4-diphenyl-1.3-butadiene: diisopropylamidoborane(2-iso-propyl, 4-[3',5'-bistrifluoromethylphenyllindenyl), n4-1.4-diphenyl-1.3-butadiene: diisopropylamidoborane(2-n-butyl, 4-[3',5'-bistrifluoromethylphenyllindenyl), n4-1.4-diphenyl-1.3-butadiene: diisopropylamidoborane(2-iso-butyl, 4-[3',5'-bistrifluoromethylphenyl]indenyl), η4-1,4-diphenyl-1,3-butadiene; diisopropylamidoborane(2-sec-butyl, 4-[3',5'-bistrifluoromethylphenyl]indenyl), n4-1,4-diphenyl-1,3-butadiene; diisopropylamidoborane(2-tert-butyl, 4-[3',5'-bistrifluoromethylphenyl]indenyl), n4-1,4-diphenyl-1,3-butadiene; diisopropylamidoborane(2-ethyl, 4-[3',5'-di-iso-propylphenyl]indenyl), n4-1.4-diphenyl-1.3-butadiene: diisopropylamidoborane(2-n-propyl, 4-[3',5'-di-iso-propylphenyl]indenyl)2 n4-1.4-diphenyl-1.3-butadiene: diisopropylamidoborane(2-iso-propyl, 4-[3',5'-di-isopropylphenyllindenyl) n4-1.4-diphenyl-1.3-butadiene: diisopropylamidoborane(2-n-butyl, 4-[3',5'-di-iso-propylphenyl]indenyl), n4-1.4-diphenyl-1,3-butadiene; diisopropylamidoborane(2-iso-butyl, 4-[3',5'-di-iso-propylphenyl]indenyl), n4-1,4-diphenyl-1,3-butadiene; diisopropylamidoborane(2-sec-butyl, 4-[3',5'-di-iso-propylphenyl]indenyl), n4-1,4-diphenyl-1,3-butadiene; diisopropylamidoborane(2-tert-butyl, 4-[3',5'-di-iso-

propylphenyl]indenyl), n4-1,4-diphenyl-1,3-butadiene;

diisopropylamidoborane(2-methyl, 4-[3',5'-di-phenylphenyl]indenyl)₂ η^4 -1.4-diphenyl-1.3-butadiene;

diisopropylamidoborane(2-ethyl, 4-[3',5'-di-phenylphenyl]indenyl), η⁴-1,4-

disopropylamidoborane(2-ethyl, 4-[3',3'-di-phenylphenyl]indenyl)₂ η '-1,4-diphenyl-1,3-butadiene;

 ${\it diisopropylamidoborane} (2\text{-n-propyl}, 4\text{-}[3',5'\text{-di-phenyl}] indenyl)_2 \eta' \text{-}$

1,4-diphenyl-1,3-butadiene;

 ${\it diisopropylamidoborane} (2-iso-propyl, 4-[3',5'-di-phenylphenyl] indenyl)_2$

η⁴-1,4-diphenyl-1,3-butadiene;

diisopropylamidoborane(2-n-butyl, 4-[3',5'-di-phenylphenyl]indenyl)_2 $\eta^4\text{-}$

1,4-diphenyl-1,3-butadiene;

diisopropylamidoborane(2-iso-butyl, 4-[3',5'-di-phenylphenyl]indenyl), η^4

1,4-diphenyl-1,3-butadiene;

diisopropylamidoborane(2-sec-butyl, 4-[3',5'-di-phenylphenyl]indenyl) $_2$ η^4 -

1,4-diphenyl-1,3-butadiene;

diisopropylamidoborane(2-tert-butyl, 4-[3',5'-di-phenylphenyl]indenyl) $_2$ η^4 -

1,4-diphenyl-1,3-butadiene;

diisopropylamidoborane(2-methyl, 4-[3',5'-di-

 $tbutylphenyl] indenyl)_{\!2} zirconium\ dimethyl;$

diisopropylamidoborane(2-ethyl, 4-[3',5'-di-

tbutylphenyl]indenyl)2zirconium dimethyl;

diisopropylamidoborane(2-n-propyl, 4-[3',5'-di-

 $tbutylphenyl] indenyl)_2 zirconium\ dimethyl;$

diisopropylamidoborane(2-iso-propyl, 4-[3',5'-di-

tbutylphenyl]indenyl)2zirconium dimethyl;

diisopropylamidoborane(2-n-butyl, 4-[3',5'-di-

tbutylphenyllindenyl)-zirconium dimethyl;

diisopropylamidoborane(2-iso-butyl, 4-[3',5'-di-

tbutylphenyllindenyl),zirconium dimethyl;

diisopropylamidoborane(2-sec-butyl, 4-[3',5'-di-

diisopropylamidoborane(2-sec-butyl, 4-[3',5'-di-

tbutylphenyl]indenyl)2zirconium dimethyl;

diisopropylamidoborane(2-tert-butyl, 4-[3',5'-ditbutylphenyl]indenyl),zirconium dimethyl; diisopropylamidoborane(2-ethyl, 4-I3',5'-bistrifluoromethylphenyllindenyl),zirconium dimethyl; diisopropylamidoborane(2-n-propyl, 4-13',5'-bistrifluoromethylphenyl]indenyl),zirconium dimethyl; diisopropylamidoborane(2-iso-propyl, 4-[3',5'-bistrifluoromethylphenyl]indenyl),zirconium dimethyl; diisopropylamidoborane(2-n-butyl, 4-[3',5'-bistrifluoromethylphenyl]indenyl),zirconium dimethyl; diisopropylamidoborane(2-iso-butyl, 4-[3',5'-bistrifluoromethylphenyllindenyl)-zirconium dimethyl; diisopropylamidoborane(2-sec-butyl, 4-[3',5'-bistrifluoromethylphenyl]indenyl),zirconium dimethyl; diisopropylamidoborane(2-tert-butyl, 4-[3',5'-bistrifluoromethylphenyl]indenyl),zirconium dimethyl; diisopropylamidoborane(2-ethyl, 4-f3',5'-di-isopropylphenyllindenyl), zirconium dimethyl; diisopropylamidoborane(2-n-propyl, 4-[3',5'-di-isopropylphenyl]indenyl),zirconium dimethyl diisopropylamidoborane(2-iso-propyl, 4-[3',5'-di-isopropylphenyl]indenyl),zirconium dimethyl; diisopropylamidoborane(2-n-butyl, 4-[3',5'-di-isopropylphenyl]indenyl),zirconium dimethyl; diisopropylamidoborane(2-iso-butyl, 4-[3',5'-di-isopropylphenyllindenyl).zirconium dimethyl: diisopropylamidoborane(2-sec-butyl, 4-[3',5'-di-isopropylphenyl]indenyl)2zirconium dimethyl; diisopropylamidoborane(2-tert-butyl, 4-[3',5'-di-isopropy[phenyl]indenyl),zirconium dimethyl:

diisopropylamidoborane(2-methyl, 4-[3',5'-diphenylphenyl]indenyl),zirconium dimethyl; diisopropylamidoborane(2-ethyl, 4-f3',5'-diphenylphenyl]indenyl),zirconium dimethyl; diisopropylamidoborane(2-n-propyl, 4-[3',5'-diphenylphenyllindenyl) zirconium dimethyl: diisopropylamidoborane(2-iso-propyl, 4-f3',5'-diphenylphenyllindenyl) zirconium dimethyl: diisopropylamidoborane(2-n-butyl, 4-[3',5'-diphenylphenyllindenyl) zirconium dimethyl: diisopropylamidoborane(2-iso-butyl, 4-[3',5'-diphenylphenyllindenyl), zirconium dimethyl; diisopropylamidoborane(2-sec-butyl, 4-[3',5'-diphenylphenyl]indenyl),zirconium dimethyl; diisopropylamidoborane(2-tert-butyl, 4-[3',5'-diphenylphenyl]indenyl),zirconium dimethyl; bis(trimethylsilyl)amidoborane(2-methyl, 4-f3',5'-ditbutvlphenyllindenyl),zirconium dichloride; bis(trimethylsilyl)amidoborane(2-ethyl, 4-[3',5'-ditbutylphenyl]indenyl),zirconium dichloride; bis(trimethylsilyl)amidoborane(2-n-propyl, 4-[3',5'-ditbutylphenyl]indenyl),zirconium dichloride; bis(trimethylsilyl)amidoborane(2-iso-propyl, 4-f3',5'-ditbutylphenyl]indenyl),zirconium dichloride; bis(trimethylsilyl)amidoborane(2-n-butyl, 4-f3',5'-ditbutylphenyllindenyl),zirconium dichloride; bis(trimethylsilyl)amidoborane(2-iso-butyl, 4-[3',5'-ditbutylphenyllindenyl),zirconium dichloride; bis(trimethylsilyl)amidoborane(2-sec-butyl, 4-I3',5'-ditbutylphenyllindenyl),zirconium dichloride;

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bis(trimethylsilyl)amidoborane(2-tert-butyl, 4-[3',5'-ditbutylphenyl]indenyl),zirconium dichloride; bis(trimethylsilyl)amidoborane(2-ethyl, 4-[3',5'-bistrifluoromethylphenyl]indenyl),zirconium dichloride; bis(trimethylsilyl)amidoborane(2-n-propyl, 4-[3',5'-bistrifluoromethylphenyl]indenyl),zirconium dichloride; bis(trimethylsilyl)amidoborane(2-iso-propyl, 4-[3',5'-bistrifluoromethylphenyl]indenyl),zirconium dichloride; bis(trimethylsilyl)amidoborane(2-n-butyl, 4-13',5'-bistrifluoromethylphenyllindenyl)-zirconium dichloride: bis(trimethylsilyl)amidoborane(2-iso-butyl, 4-f3',5'-bistrifluoromethylphenyllindenyl).zirconium dichloride: bis(trimethylsilyl)amidoborane(2-sec-butyl, 4-[3',5'-bistrifluoromethylphenyl]indenyl),zirconium dichloride; bis(trimethylsilyl)amidoborane(2-tert-butyl, 4-[3',5'-bistrifluoromethylphenyl]indenyl),zirconium dichloride; bis(trimethylsilyl)amidoborane(2-ethyl, 4-f3',5'-di-isopropylphenyl]indenyl),zirconium dichloride; bis(trimethylsilyl)amidoborane(2-n-propyl, 4-[3',5'-di-isopropylphenyl]indenyl),zirconium dichloride bis(trimethylsilyl)amidoborane(2-iso-propyl, 4-[3',5'-di-isopropylphenyl]indenyl),zirconium dichloride; bis(trimethylsilyl)amidoborane(2-n-butyl, 4-[3',5'-di-isopropylphenyl]indenyl),zirconium dichloride; bis(trimethylsilyl)amidoborane(2-iso-butyl, 4-[3',5'-di-isopropylphenyl]indenyl),zirconium dichloride; bis(trimethylsilyl)amidoborane(2-sec-butyl, 4-[3',5'-di-iso-

propylphenyl]indenyl),zirconium dichloride; bis(trimethylsilyl)amidoborane(2-tert-butyl, 4-[3',5'-di-isopropylphenyl]indenyl),zirconium dichloride: bis(trimethylsilyl)amidoborane(2-methyl, 4-[3',5'-diphenylphenyllindenyl), zirconium dichloride; bis(trimethylsilyl)amidoborane(2-ethyl, 4-[3',5'-diphenylphenyl indenyl), zirconium dichloride; bis(trimethylsilyl)amidoborane(2-n-propyl, 4-[3',5'-diphenylphenyllindenyl),zirconium dichloride; bis(trimethylsilyl)amidoborane(2-iso-propyl, 4-[3',5'-diphenylphenyllindenyl), zirconium dichloride; his(trimethylsily1)amidohorane(2-n-butyl, 4-[3',5'-diphenylphenyllindenyl), zirconium dichloride; bis(trimethylsilyl)amidoborane(2-iso-butyl, 4-I3',5'-diphenylphenyllindenyl), zirconium dichloride; bis(trimethylsilyl)amidoborane(2-sec-butyl, 4-[3',5'-diphenylphenyl]indenyl),zirconium dichloride; bis(trimethylsilyl)amidoborane(2-tert-butyl, 4-[3',5'-diphenylphenyl]indenyl)2zirconium dichloride; bis(trimethylsilyl)amidoborane(2-methyl, 4-[3',5'-di-tbutylphenyl]indenyl), n4-1.4-diphenyl-1.3-butadiene; bis(trimethylsilyl)amidoborane(2-ethyl, 4-[3',5'-di-tbutylphenyl]indenyl)2 n⁴-1,4-diphenyl-1,3-butadiene; bis(trimethylsilyl)amidoborane(2-n-propyl, 4-[3',5'-ditbutylphenyl]indenyl), n4-1,4-diphenyl-1,3-butadiene; bis(trimethylsilyl)amidoborane(2-iso-propyl, 4-[3',5'-ditbutylphenyllindenyl), n4-1.4-diphenyl-1,3-butadiene; bis(trimethylsilyl)amidoborane(2-n-butyl, 4-[3',5'-ditbutylphenyllindenyl), n4-1,4-diphenyl-1,3-butadiene; bis(trimethylsilyl)amidoborane(2-iso-butyl, 4-[3',5'-ditbutylphenyllindenyl), n4-1,4-diphenyl-1,3-butadiene; bis(trimethylsilyl)amidoborane(2-sec-butyl, 4-[3',5'-di-

tbutylphenyllindenyl), n4-1,4-diphenyl-1,3-butadiene;

bis(trimethylsilyl)amidoborane(2-tert-butyl, 4-f3',5'-ditbutyIphenyl]indenyl), n4-1,4-diphenyl-1,3-butadiene; bis(trimethylsilyl)amidoborane(2-ethyl, 4-[3',5'-bistrifluoromethylphenyllindenyl), n4-1.4-diphenyl-1,3-butadiene: bis(trimethylsilyl)amidoborane(2-n-propyl, 4-[3',5'-bistrifluoromethylphenyllindenyl), n4-1,4-diphenyl-1,3-butadiene: bis(trimethylsilyl)amidoborane(2-iso-propyl, 4-[3',5'-bistrifluoromethylphenyl]indenyl), n4-1,4-diphenyl-1,3-butadiene; bis(trimethylsilyl)amidoborane(2-n-butyl, 4-J3',5'-bistrifluoromethylphenyl]indenyl), n4-1,4-diphenyl-1,3-butadiene; bis(trimethylsilyl)amidoborane(2-iso-butyl, 4-[3',5'-bistrifluoromethylphenyllindenyl), n4-1,4-diphenyl-1,3-butadiene; bis(trimethylsilyl)amidoborane(2-sec-butyl, 4-[3',5'-bistrifluoromethylphenyl]indenyl), n4-1,4-diphenyl-1,3-butadiene; bis(trimethylsilyl)amidoborane(2-tert-butyl, 4-[3',5'-bistrifluoromethylphenyl]indenyl), n4-1,4-diphenyl-1,3-butadiene; bis(trimethylsilyl)amidoborane(2-ethyl, 4-[3',5'-di-isopropylphenyl]indenyl), n4-1,4-diphenyl-1,3-butadiene; bis(trimethylsilyl)amidoborane(2-n-propyl, 4-[3',5'-di-isopropylphenyl]indenyl), n4-1,4-diphenyl-1,3-butadiene; bis(trimethylsilyl)amidoborane(2-iso-propyl, 4-[3',5'-di-isopropylphenyllindenyl) n4-1.4-diphenyl-1.3-butadiene: bis(trimethylsilyl)amidoborane(2-n-butyl, 4-[3',5'-di-isopropylphenyllindenyl), n4-1.4-diphenyl-1.3-butadiene: bis(trimethylsilyl)amidoborane(2-iso-butyl, 4-f3',5'-di-isopropylphenyllindenyl), n4-1.4-diphenyl-1.3-butadiene: bis(trimethylsilyl)amidoborane(2-sec-butyl, 4-[3',5'-di-isopropylphenyllindenyl), n4-1.4-diphenyl-1.3-butadiene:

bis(trimethylsilyl)amidoborane(2-tert-butyl, 4-[3',5'-di-isopropylphenyllindenyl), n4-1,4-diphenyl-1,3-butadiene; bis(trimethylsilyl)amidoborane(2-methyl, 4-f3',5'-diphenylphenyl]indenyl), η4-1,4-diphenyl-1,3-butadiene; bis(trimethylsilyl)amidoborane(2-ethyl, 4-[3',5'-di-phenylphenyl]indenyl), n4-1.4-diphenyl-1.3-butadiene: bis(trimethylsilyl)amidoborane(2-n-propyl, 4-[3',5'-diphenylphenyllindenyl), n4-1,4-diphenyl-1,3-butadiene; bis(trimethylsilyl)amidoborane(2-iso-propyl, 4-[3',5'-diphenylphenyllindenyl), n4-1.4-diphenyl-1,3-butadiene; bis(trimethylsilyl)amidoborane(2-n-butyl, 4-[3',5'-diphenylphenyllindenyl), n4-1,4-diphenyl-1,3-butadiene; bis(trimethylsilyl)amidoborane(2-iso-butyl, 4-[3',5'-diphenylphenyllindenyl), n4-1,4-diphenyl-1,3-butadiene; bis(trimethylsilyI)amidoborane(2-sec-butyl, 4-J3',5'-diphenylphenyl]indenyl), n4-1,4-diphenyl-1.3-butadiene: bis(trimethylsilyl)amidoborane(2-tert-butyl, 4-f3',5'-diphenylphenyllindenyll, n4-1,4-diphenyl-1,3-butadiene: bis(trimethylsilyl)amidoborane(2-methyl, 4-f3',5'-ditbutvlphenyllindenyl).zirconium dimethyl; bis(trimethylsilyl)amidoborane(2-ethyl, 4-[3',5'-ditbutylphenyllindenyl),zirconium dimethyl; bis(trimethylsilyl)amidoborane(2-n-propyl, 4-[3',5'-ditbutylphenyl]indenyl),zirconium dimethyl; bis(trimethylsilyl)amidoborane(2-iso-propyl, 4-[3',5'-ditbutylphenyl]indenyl),zirconium dimethyl; bis(trimethylsilyl)amidoborane(2-n-butyl, 4-[3',5'-ditbutylphenyllindenyl).zirconium dimethyl: bis(trimethylsilyl)amidoborane(2-iso-butyl, 4-[3',5'-ditbutylphenyllindenyl).zirconium dimethyl:

bis(trimethylsilyl)amidoborane(2-sec-butyl, 4-[3',5'-ditbutylphenyllindenyl).zirconium dimethyl; bis(trimethylsilyl)amidoborane(2-tert-butyl, 4-[3',5'-ditbutylphenyl]indenyl)2zirconium dimethyl; bis(trimethylsilyf)amidoborane(2-ethyl, 4-[3',5'-bistrifluoromethylphenyl]indenyl),zirconium dimethyl; bis(trimethylsilyl)amidoborane(2-n-propyl, 4-[3',5'-bistrifluoromethylphenyllindenyl),zirconium dimethyl; bis(trimethylsilyl)amidoborane(2-iso-propyl, 4-[3',5'-bistrifluoromethylphenyllindenyl), zirconium dimethyl; bis(trimethylsilyI)amidoborane(2-n-butyl, 4-[3',5'-bistrifluoromethylphenyllindenyl),zirconium dimethyl; his(trimethylsilyl)amidoborane(2-iso-butyl, 4-[3',5'-bistrifluoromethylphenyllindenyl), zirconium dimethyl; bis(trimethylsilyl)amidoborane(2-sec-butyl, 4-[3',5'-bistrifluoromethylphenyl]indenyl),zirconium dimethyl; bis(trimethylsilyl)amidoborane(2-tert-butyl, 4-[3',5'-bistrifluoromethylphenyllindenyl),zirconium dimethyl; bis(trimethylsilyl)amidoborane(2-ethyl, 4-[3',5'-di-isopropylphenyl[indenyl],zirconium dimethyl; bis(trimethylsilyl)amidoborane(2-n-propyl, 4-[3',5'-di-isopropylphenyl]indenyl),zirconium dimethyl bis(trimethylsilyl)amidoborane(2-iso-propyl, 4-[3',5'-di-isopropylphenyl]indenyl)2zirconium dimethyl; bis(trimethylsilyl)amidoborane(2-n-butyl, 4-[3',5'-di-isopropylphenyl]indenyl),zirconium dimethyl; bis(trimethylsilyl)amidoborane(2-iso-butyl, 4-[3',5'-di-isopropylphenyl]indenyl),zirconium dimethyl; bis(trimethylsilyl)amidoborane(2-sec-butyl, 4-[3',5'-di-isopropylphenyllindenyl).zirconium dimethyl:

bis(trimethylsilyl)amidoborane(2-tert-butyl, 4-[3',5'-di-isopropylphenyllindenyl),zirconium dimethyl; bis(trimethylsilyl)amidoborane(2-methyl, 4-[3',5'-diphenylphenyllindenyl),zirconium dimethyl; bis(trimethylsilyl)amidoborane(2-ethyl, 4-[3',5'-diphenylphenyllindenyl), zirconium dimethyl; bis(trimethylsilyl)amidoborane(2-n-propyl, 4-[3',5'-diphenylphenyllindenyl) zirconium dimethyl; bis(trimethylsilyl)amidoborane(2-iso-propyl, 4-[3'.5'-diphenylphenyl]indenyl),zirconium dimethyl; bis(trimethylsilyl)amidoborane(2-n-butyl, 4-[3',5'-diphenylphenyl]indenyl),zirconium dimethyl; bis(trimethylsilyl)amidoborane(2-iso-butyl, 4-[3',5'-diphenylphenyl]indenyl),zirconium dimethyl; bis(trimethylsilyl)amidoborane(2-sec-butyl, 4-[3'.5'-diphenylphenyl]indenyl)2zirconium dimethyl; or bis(trimethylsilyl)amidoborane(2-tert-butyl, 4-[3',5'-diphenylphenyl indenyl), zirconium dimethyl.

 The process of any of claims 55 to 75 wherein the second catalyst component comprises one or more of bis(trimethylsilyl)amidoborane(2-tert-butyl, 4-[3',5'-diphenylphenyllindenyl),zirconium dimethyl.

A continuous process to prepare an adhesive comprising:

- combining monomer, solvent, catalyst and activator in a reactor system.
- withdrawing polymer solution from the reactor system,
- 3) removing at least 10% solvent from the polymer solution,
- quenching the reaction,

- 5) devolatilizing the polymer solution to form molten polymer,
- combining the molten polymer and one or more additives in a static mixer.
- 7) removing the polymer combination from the static mixer, and
- pelletizing or drumming the polymer combination.

79. A continuous process to produce a branched olefin polymer comprising:

- selecting a first catalyst component capable of producing a polymer having an Mw of 80,000 or less and a crystallinity of 15% or less under selected polymerization conditions;
- selecting a second catalyst component capable of producing polymer having an Mw of 80,000 or less and a crystallinity of 50% or more at the selected polymerization conditions:
- contacting the catalyst components in the presence of one or more activators with propylene and one or more C4 to C20 olefins, and, optionally one or more C4 to C20 diolefins;
- 4) at a temperature of greater than 105°C;
- 5) at a residence time of 120 minutes or less;
- wherein the ratio of the first catalyst to the second catalyst is from
 1:1 to 20:1;
- wherein the activity of the catalyst components is at least 100 kilograms of polymer per gram of the catalyst compounds; and wherein at least 80% of the olefins are converted to polymer.

80. The process of claim 79 wherein:

- a) the olefins comprise propylene and one or more of butene, pentene, hexene, heptene, octene; nonene, decene, dodecene; and
- b) the temperature is greater than 110°C; and
- c) the residence time is 60 to 120 minutes; and

- the ratio of the first catalyst to the second catalyst is from 1:1 to
 1:10
- 81. The process of claim 79 or 80 wherein the diolefin is present and is selected from the group consisting of 1,6-heptadiene, 1,7-octadiene, 1,8-nonadiene, 1,9-decadiene, 1,10-undecadiene, 1,11-dodecadiene, 1,12-tridecadiene, 1,13-tetradecadiene, eyclopentadiene, vinylnorbornene, norbornadiene, ethylidene norbornene, divinylbenzene, dicyclopentadiene, polybutadienes having an Mw less than 1000 g/mol, butadiene, pentadiene, hexadiene, pentadecadiene, hexadecadiene, octadecadiene, nonadecadiene, icosadiene, heneicosadiene, docosadiene, tricosadiene, tetracosadiene, pentacosadiene, hexacosadiene, heptacosadiene, tricosadiene, octacosadiene, nonacosadiene, tetracosadiene, cotacosadiene, tricosadiene, cotacosadiene, orotornadiene, tricontadiene, cyclopentadiene, vinylnorbornene, norbornadiene, ethylidene norbornene, divinylbenzene, diovelopentadiene, or combinations thereof.
- The process of claim 79, 80 or 81 wherein the olefin comprises propylene
 and one or more of butene, pentene, hexene, heptene, octene, nonene,
 decene, dodecene, 4-methyl-pentene-1, 3-methyl pentene-1, and 3,5,5trimethyl-hexene-1.
- 83. A continuous process to make an adhesive comprising
 - selecting a first catalyst component capable of producing a polymer having an Mw of 100,000 or less and a crystallinity of 5% or less under selected polymerization conditions:
 - selecting a second catalyst component capable of producing polymer having an Mw of 100,000 or less and a crystallinity of 20% or more at the selected polymerization conditions:
 - contacting, in a solvent and in a reaction zone under the selected polymerization conditions, the catalyst components in the presence

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- of one or more activators with one or more C3 to C40 olefins, and, optionally one or more diolefins;
- at a temperature of greater than 100°C;
- at a residence time of 120 minutes or less;
- 6) wherein the ratio of the first catalyst to the second catalyst is from 1:1 to 50:1;
- wherein the activity of the catalyst components is at least 50 kilograms of polymer per gram of the catalyst compounds; and wherein at least 80% of the olefins are converted to polymer;
- 8) withdrawing polymer solution from the reaction zone;
- removing at least 10% solvent from the polymer solution;
- 10) quenching the reaction;
- 11) devolatilizing the polymer solution to form molten polymer;
- 12) combining the molten polymer and one or more additives in a static mixer;
- 13) removing the polymer combination from the static mixer; and
- 14) pelletizing or drumming the polymer combination.

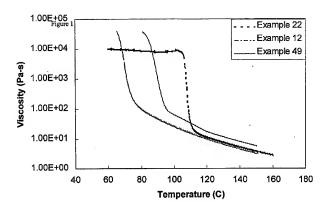
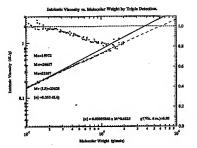


Figure 1

Example 4



Example 31

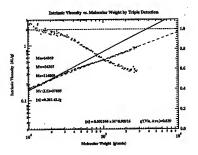


Figure 2

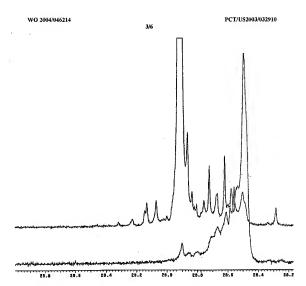
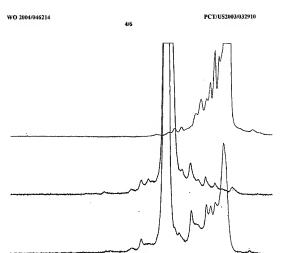


Figure 3



25.2

29.1

28.8

28.4

28.2

28.8

Figure 4

28.8 28.6

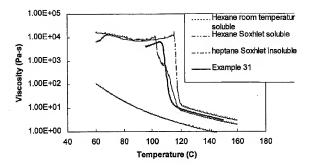


Figure 5

FIGURE 6

Example 32 in Table 6

